

# Overview of CPRA Projects in Southeast Louisiana

## State of the Coast Conference

New Orleans, LA

May 31, 2018

John Troutman

CPRA Operations Division

New Orleans Regional Office



**committed to our coast**

# Introduction



Coastal Protection and  
Restoration Authority of Louisiana

## ➤ **Review Background Information**

- Pontchartrain Basin
- Breton Sound Basin
- Mississippi River Basins

## ➤ **Overview of Master Plan Projects & Strategies**

- Non-structural flood protection will NOT be covered
- Brief look at Structural Flood Protection
- Focus on Restoration

## ➤ **Overview of existing & funded projects** and how they fit into larger MP strategies

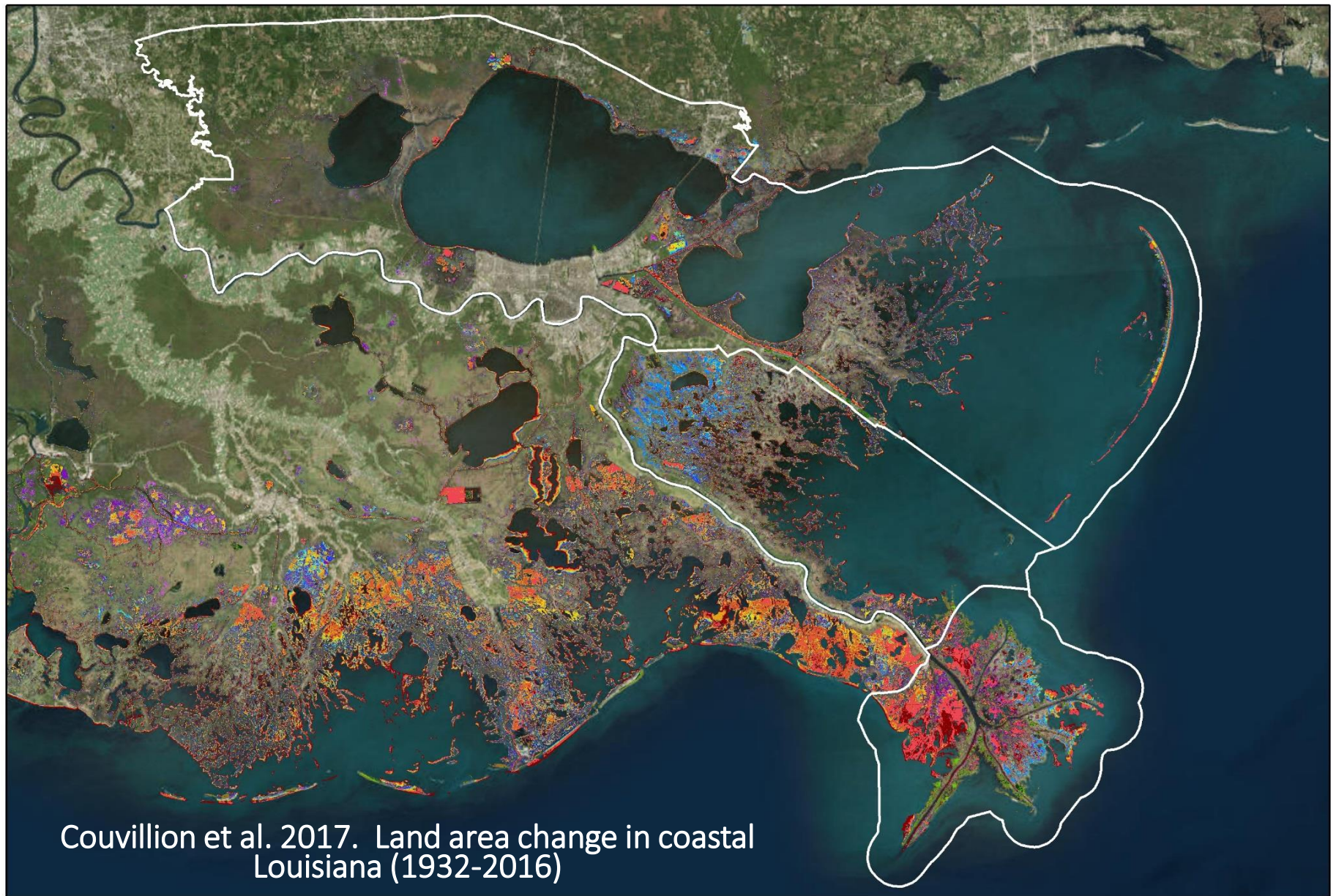




# OVERVIEW OF BASINS

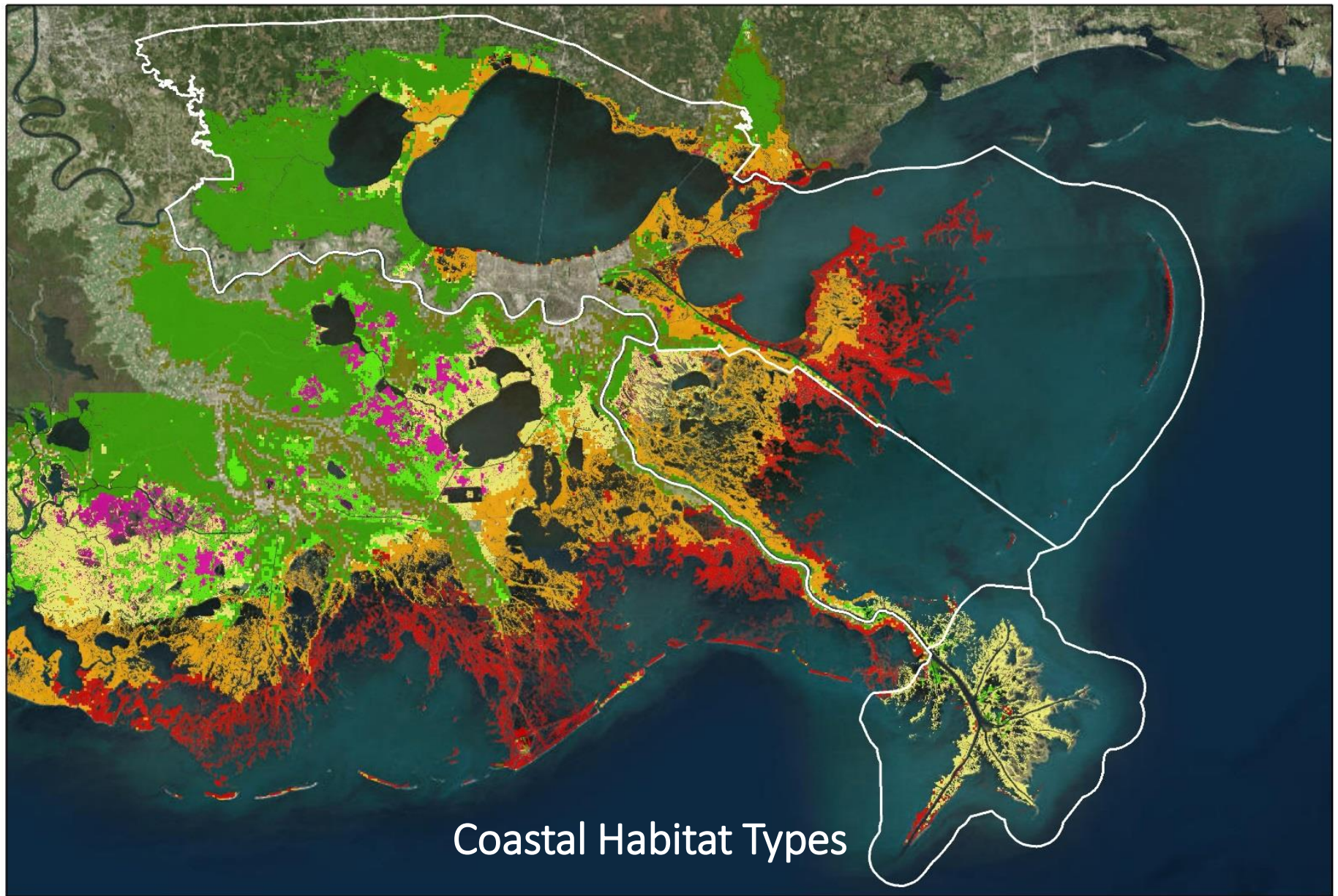
	Pontchartrain Basin	Breton Sound Basin	Mississippi River Basin
<b>Total Area (acres)</b>	2.75 Million	676,203	521,108
<b>Wetland Area (acres)</b>	607,726	173,154	78,601
<b>Land Change 1932-2016 (square kilometers; Couvillion et al 2017)</b>	-130,716	-105,265	-92,664
<b>% Change from 1932 (Couvillion et al 2017)</b>	-17%	-38%; second highest	-55%; highest on the coast
<b>Future Subsidence (mm/year; Master Plan 2017)</b>	0-10; increases down basin and N-S	3-10 mm	15-35





Hydrologic Basins





## Coastal Habitat Types



### 2017 Master Plan Coastal Vegetation - Initial Conditions

- |  |  |   |  |
|--|--|---|--|
|  Forested Wetland |  Intermediate Marsh |  Salt Marsh  |  Floating Marsh |
|  Fresh Marsh      |  Breackish Marsh    |  Bare Ground |  |

 Hydrologic Basins

# **ESTUARY ISSUES**

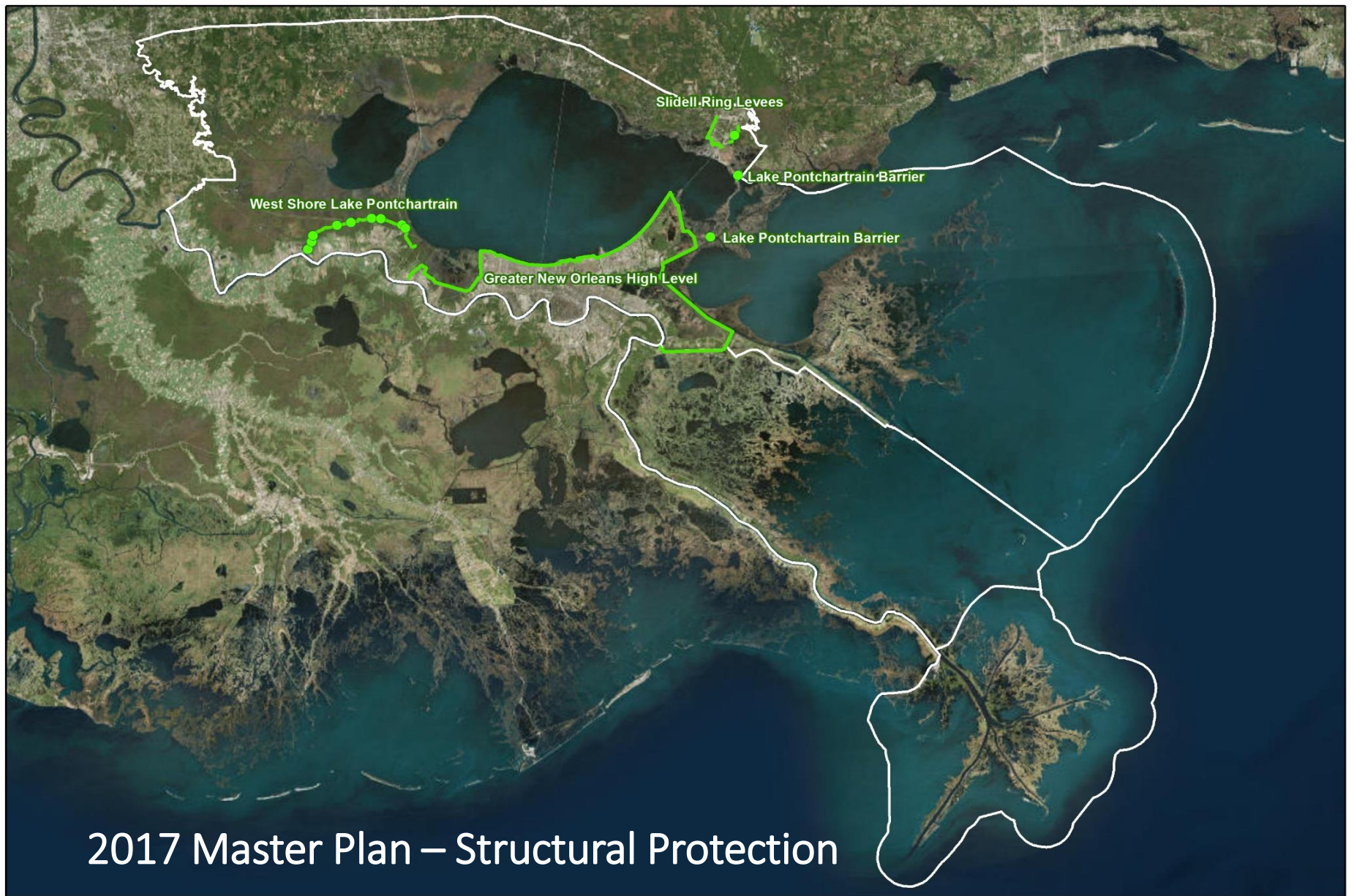
- **Common issues across basins:**

- **Sediment deprivation** – sediment starved deltaic wetland disconnected from the Mississippi River (levees)
- **Subsidence** – varies regionally (multiple causes; rates generally increase down basin)
- **Sea level rise**
- **Shoreline erosion** - exposed fringe marshes = high wave attack
- **Saltwater intrusion** into upper basin freshwater areas
- **Oil and Gas activities** – canals and altered hydrology
- **Storm Impacts** - storm surge related damages

- **Mississippi River Basin “extra” issues**

- **Young alluvial delta** at edge of continental shelf; requires very high volumes of sediment to maintain / create land; highest subsidence
- **Navigation channel dredging**
- **New issue: scale insect** – invasive from China. Impacts to Roseau Cane habitats







## 2017 Master Plan – Structural Protection



### 2017 Master Plan Structural Protection Projects

 2017 Master Plan Structural Protection Line

 2017 Master Plan Structural Protection Point

 Hydrologic Basins





## 2017 Master Plan – Restoration Projects



### 2017 Master Plan Projects



2017 Master Plan Diversion



2017 Master Plan Project



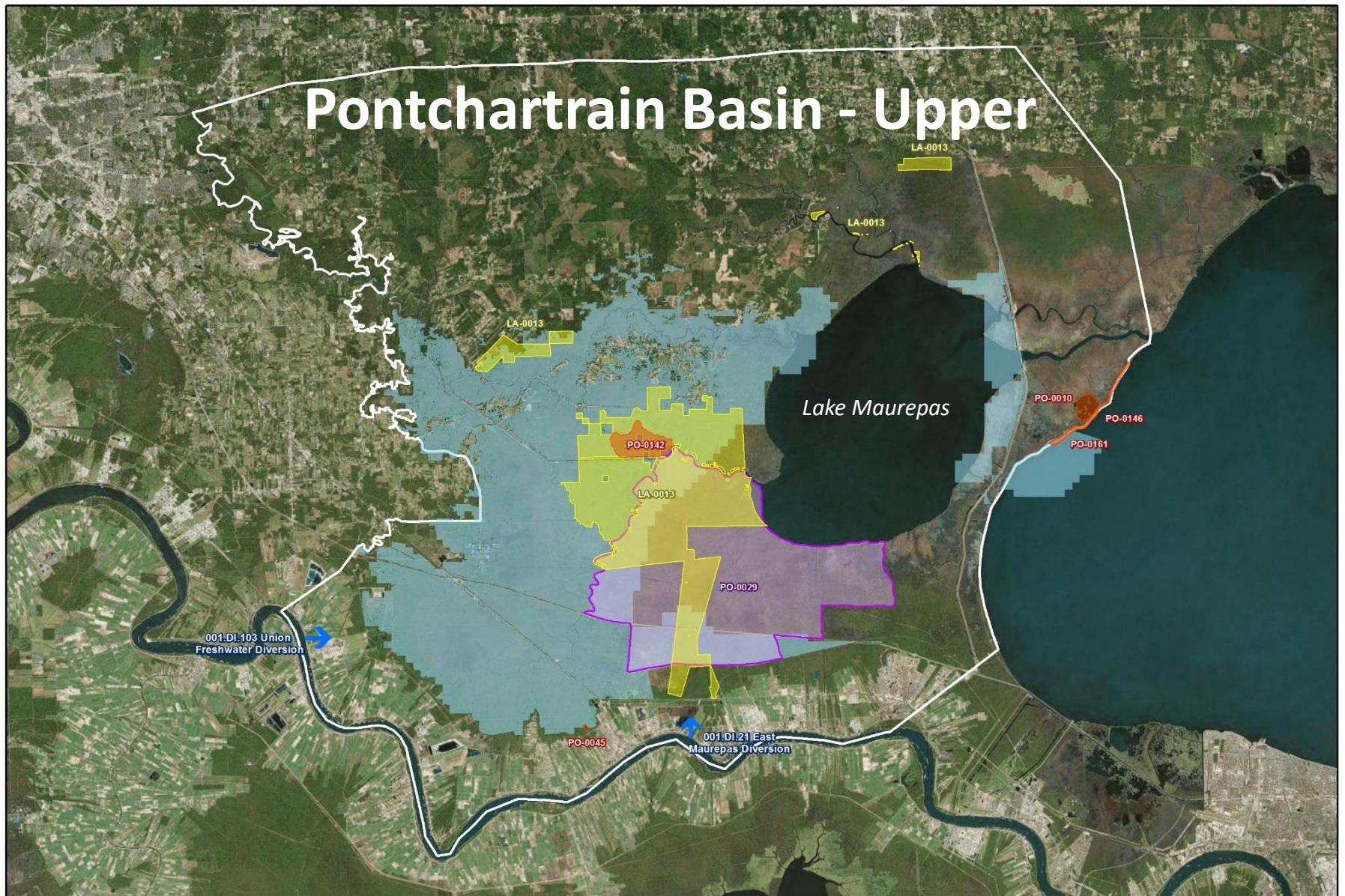
2017 Master Plan Diversion Outfall



Hydrologic Basins



# Pontchartrain Basin - Upper



## 2017 Master Plan Projects


-  2017 Master Plan Diversion
-  2017 Master Plan Project
-  2017 Master Plan Diversion Outfall

## CPRA Projects-Constructed

-  Restoration Project
-  Diversion Outfall

## CPRA Projects-Not Constructed

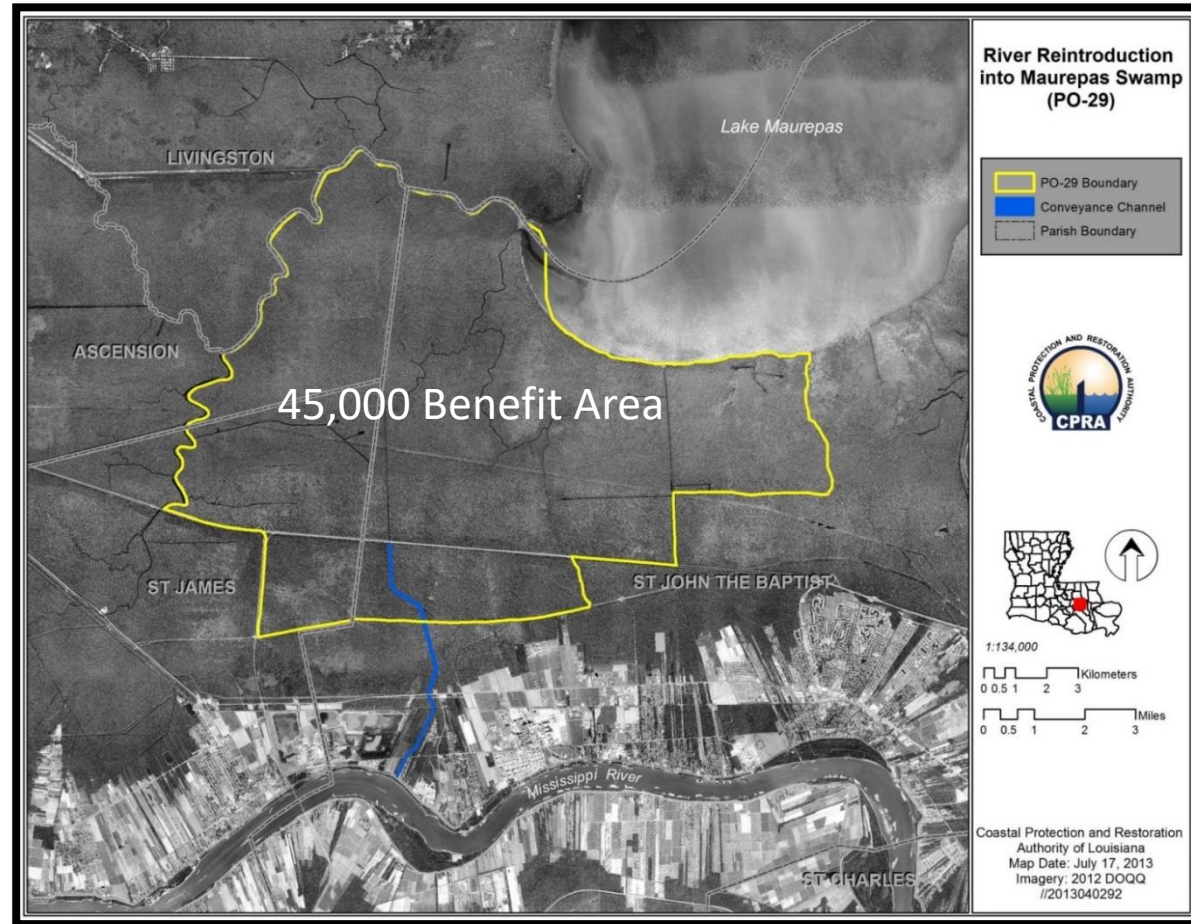
-  Restoration Project
-  Diversion Outfall

 Hydrologic Basins



# River Reintroduction Into Maurepas Swamp (PO-0029)

- Project Features (major):
  - Gated structure (2,000 cfs)
  - Conveyance channel
  - Guide levees
  - Drainage Pump Station
- Funding: RESTORE
  - \$24 M E&D
  - \$175 M (TBD for Con.)
- Status
  - E&D (95%)
  - 2017-2020: Permit, Landrights, Design, Pre-construction Monitoring and Modeling







Davis Pond  
Freshwater  
Diversion  
Structure

Guide  
Levee

*Mississippi River*



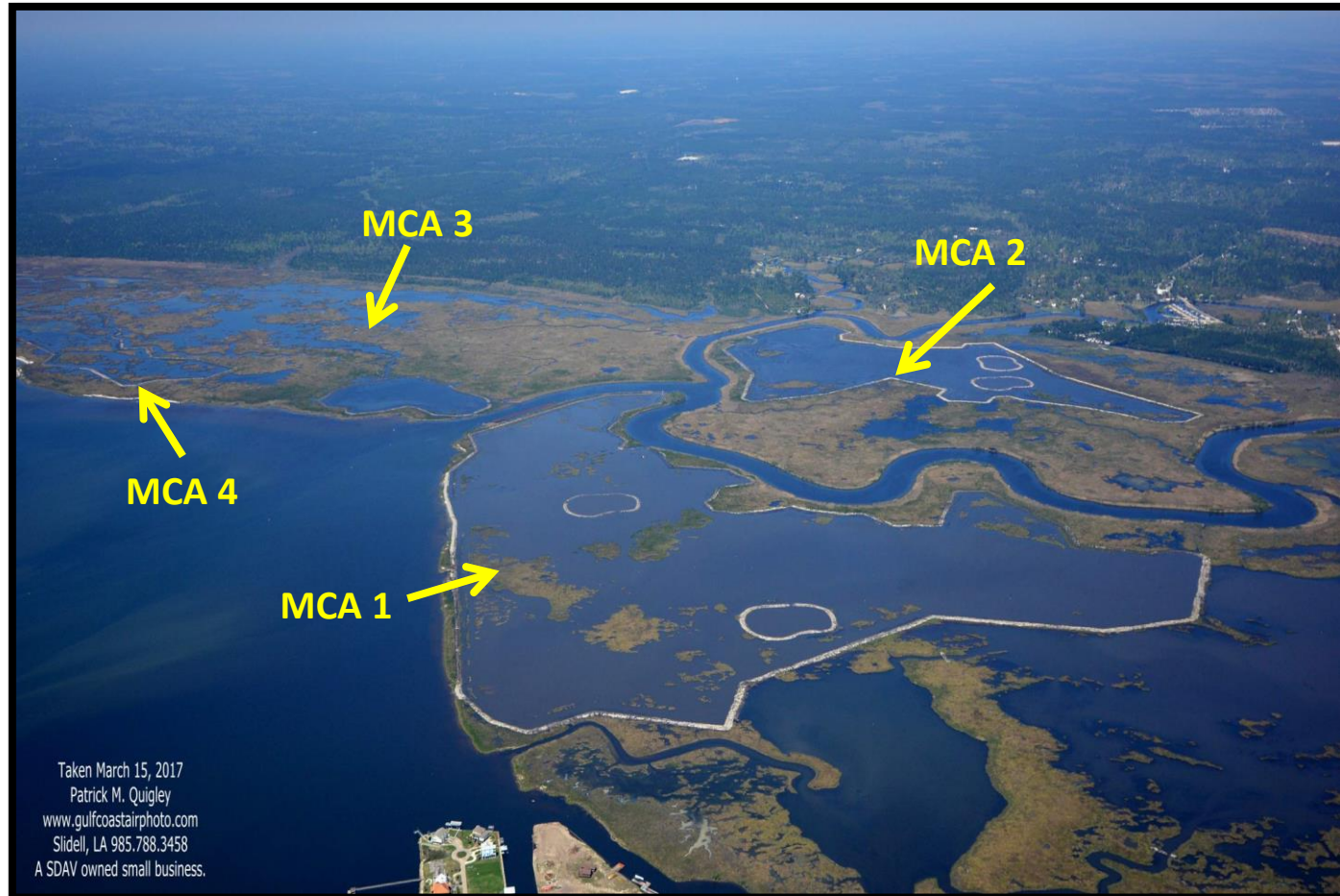






# Bayou Bonfouca Marsh Creation (PO-104)

- **Project Features:**
  - Created 424 acres
  - Nourished 500 acres
- **Funding:**
  - CWPPRA
  - \$29 M
- **Status:**
  - Construction Completed February 2018





# Bayou Bonfouca Marsh Creation (PO-104)





# Bayou Bonfouca Marsh Creation (PO-104)









# St. Catherine Island Marsh Creation and Shoreline Protection Project (PO-0179)

- **Project Features:**
  - 10 miles of Shoreline Protection
  - Create/nourish 219 acres
- **Project Funding:**
  - CWPPRA
  - Phase 1 = \$2.3 M (Approved)
  - Total Cost - \$35 M
- **Status:** construction mid-2020 (target)



# Pontchartrain Basin - Lower

Lake Borgne

MP ≠ Chandeluer Islands

001.DI.18 Central  
Wetlands Diversion



## 2017 Master Plan Projects


-  2017 Master Plan Diversion
-  2017 Master Plan Project
-  2017 Master Plan Diversion Outfall

## CPRA Projects- Constructed

-  Restoration Project
-  Diversion Outfall

## CPRA Projects- Not Constructed

-  Restoration Project
-  Diversion Outfall

 Hydrologic Basins





# Golden Triangle Marsh Creation (PO-163)

- **Project Features:**

- 600 acres of marsh creation
- Borrow area = Lake Borgne

- **Funding:** RESTORE

- \$4.7 million E&D
- \$ 50 million Total

- **Status:**

- E&D
- Construction:  
Fall 2020





# Lake Borgne Marsh Creation Increment One (PO-180)

- **Project Features:**

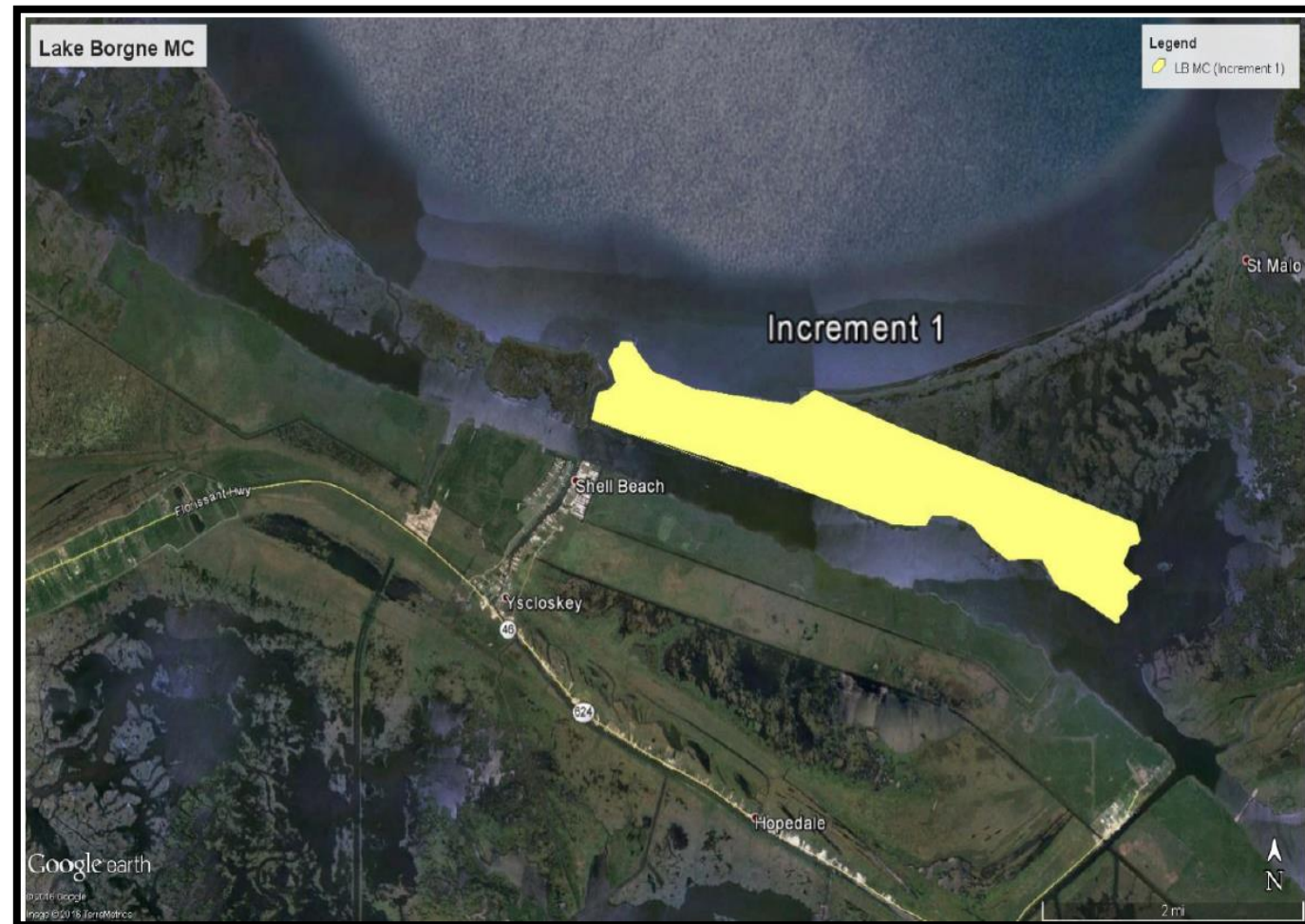
- 1,548 acres marsh creation
- Borrow = Lake Borgne

- **Funding:**

- NRDA
- \$7 million E&D
- \$127 million Total

- **Status:**

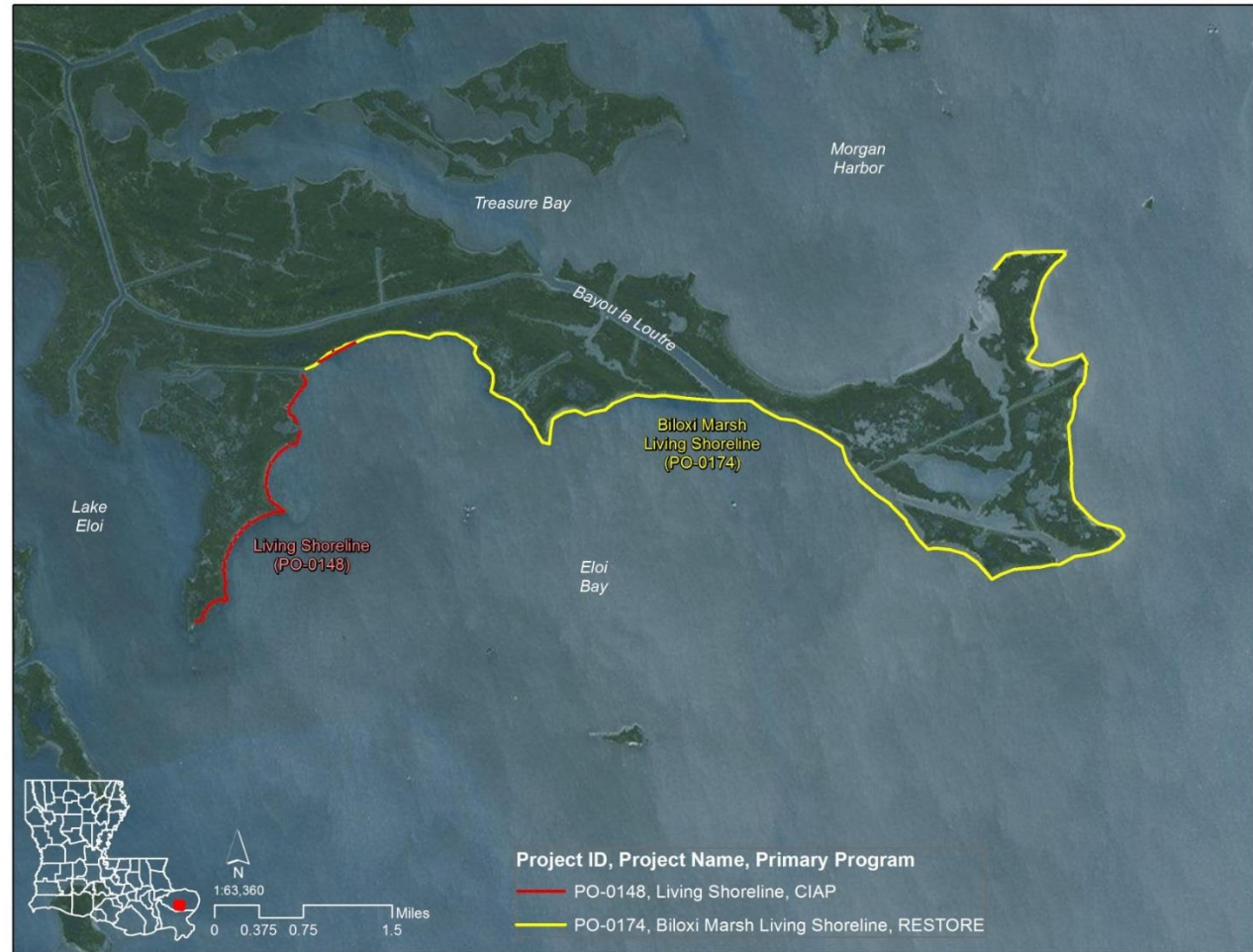
- E&D
- Construction late 2021





# Biloxi Marsh Living Shoreline (PO-0174)

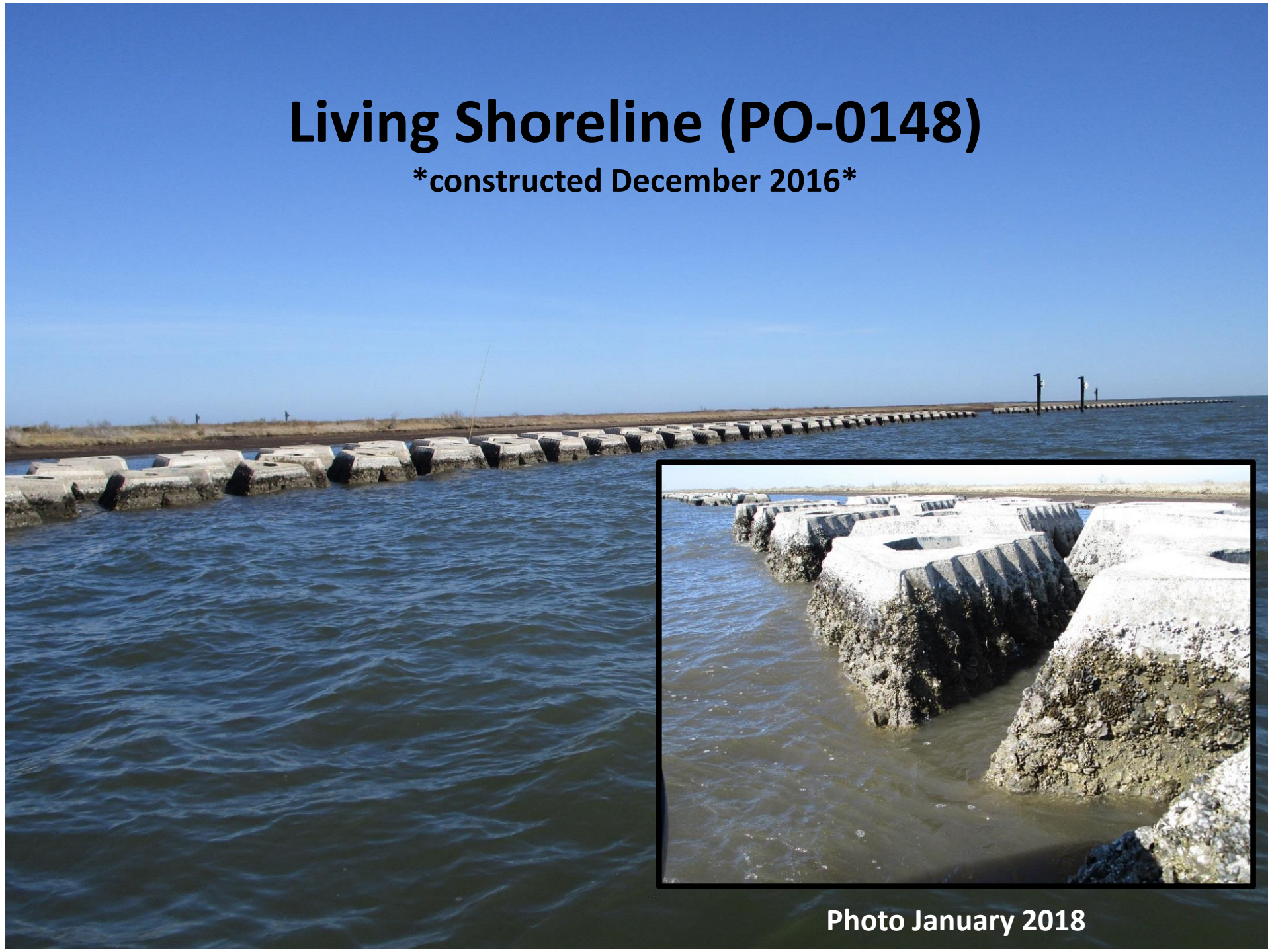
- **Project Features:**
  - 9-11 miles of living shoreline
- **Funding: RESTORE**
  - \$ 3.2 M E&D
  - \$57.7M total (estimated)
- **Status :**
  - E&D
  - Construction:  
Fall 2019





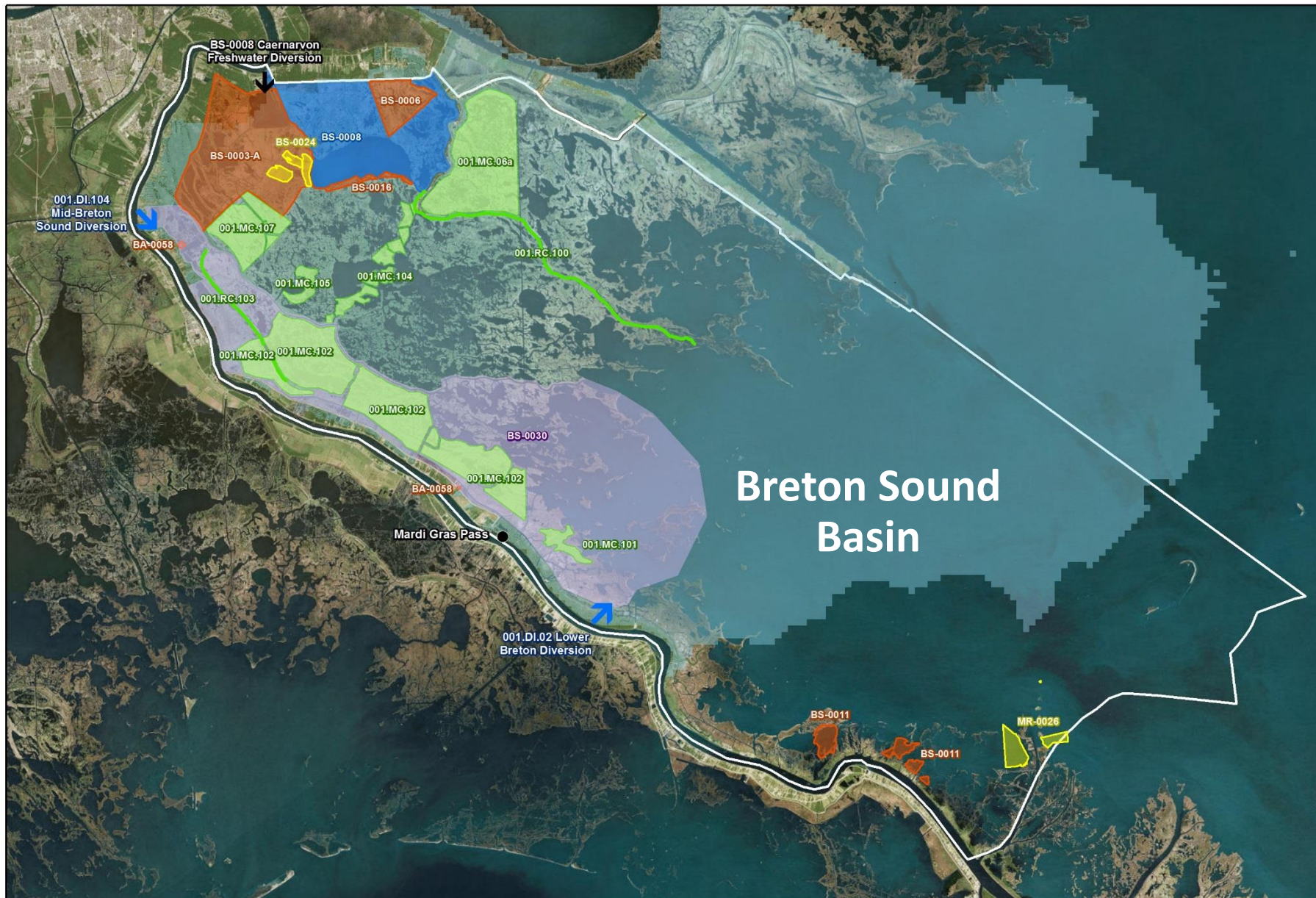
# Living Shoreline (PO-0148)

**\*constructed December 2016\***



**Photo January 2018**





#### 2017 Master Plan Projects


-  2017 Master Plan Diversion
-  2017 Master Plan Project
-  2017 Master Plan Diversion Outfall

#### CPRA Projects-Constructed

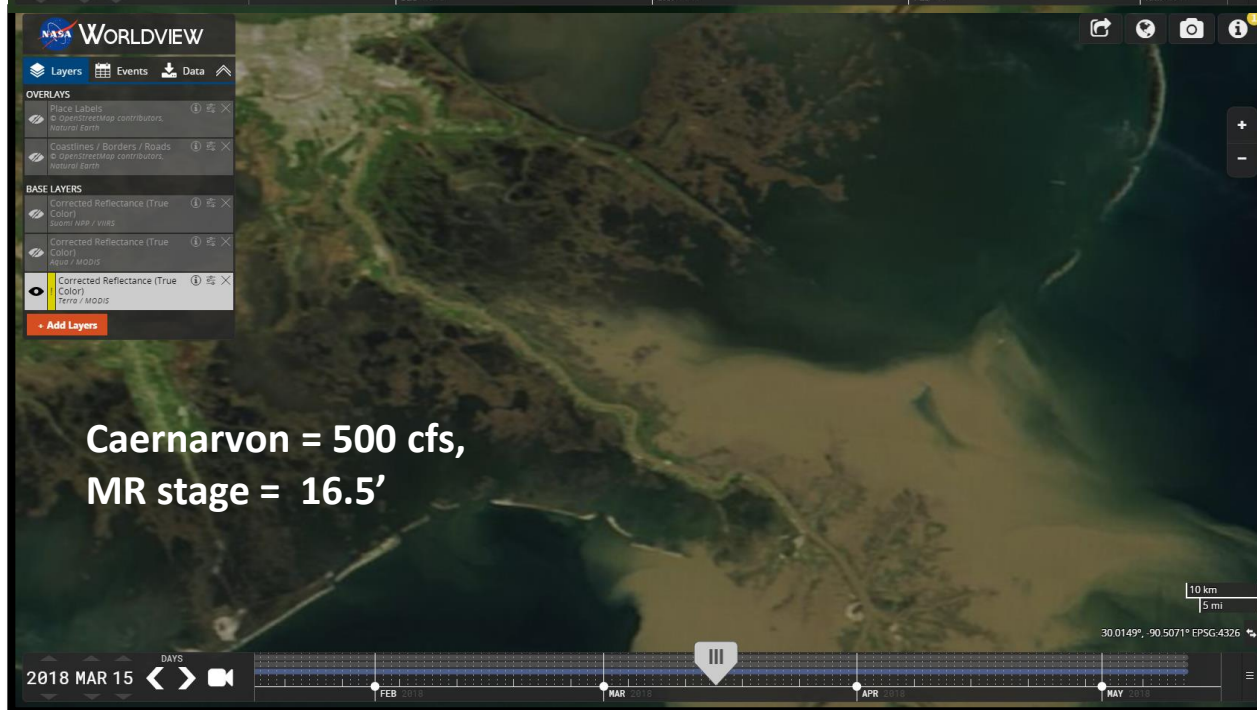
-  Restoration Project
-  Diversion Outfall

#### CPRA Projects-Not Constructed

-  Restoration Project
-  Diversion Outfall

 Hydrologic Basins







# Mid-Breton Sediment Diversion (BS-30)

- **Project Features:**

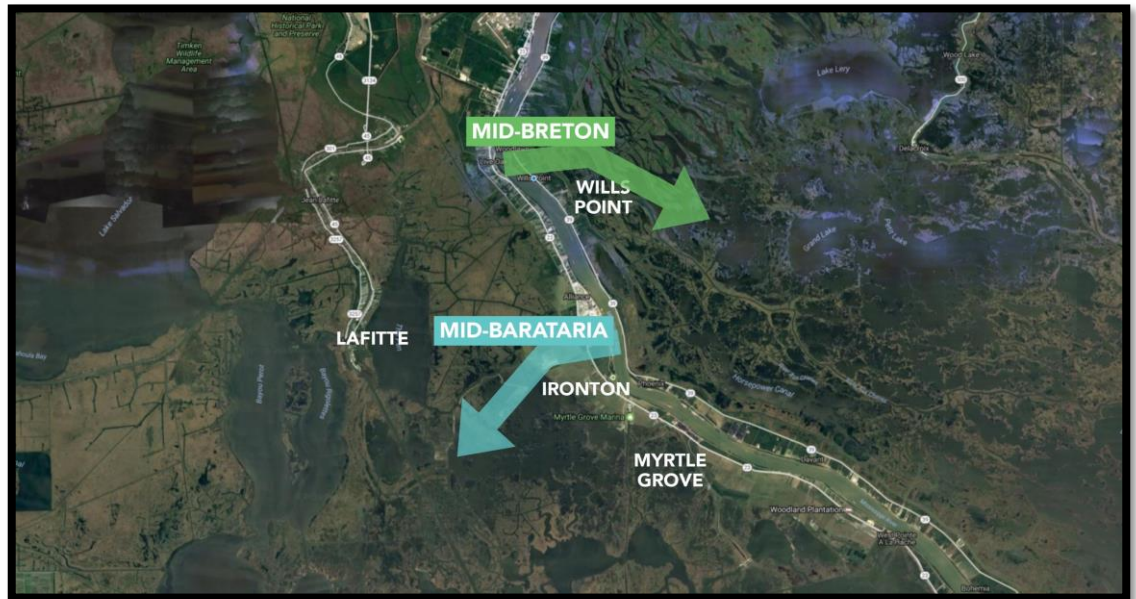
- Gated structure (peak 35,000 cfs)
- Diversion channel
- Guide levees
- Forced drainage pump station if needed

- **Funding:**

- \$200 Million for Sediment Diversion Program
- Includes all pre-construction activities for Mid-Breton and Mid-Barataria

- **Status:**

- Early E&D
- multiple year E&D and construction
- 2025 = ballpark for construction



# System Wide Assessment and Monitoring Program

## Basin-Scale Programmatic Monitoring for Diversions

**\*\*Project Specific Monitoring to be added for new diversion projects**





MP  $\neq$  Mississippi River Basin



- CPRA Projects-  
Constructed**

- CPRP Projects-  
Not Constructed**

-  Hydrologic Basins



**CONNECT WITH US!**



**@LouisianaCPRA**







→ Direction of increasing Holocene sediment depth

Gulf of Mexico

Teche  
5700-4000 YBP

Lafourche  
3475-250 YBP

Balize  
< 800 YBP

St Bernard  
4650-1850 YBP

Sediment Loading  
&  
Downwarping of  
Underlying Crust

Holocene Sediments

Hinge Line

Gulf of Mexico

Map of Quaternary Downwarping in Louisiana  
estimated by Fisk (1955)  
(in ft)

Hinge line

50

150

250

350

450

Gulf of Mexico